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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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(54) Title: SHORT PEPTIDES FROM THE B4 AND B5 REGIONS OF PROTEIN KINASES WHICH SELECTIVELY MODULATE PROTEIN ACTIVITY

(57) Abstract: Peptides which are peptide derivatives of the B4-5 region of a protein kinase can modulate the activity of protein kinases. The activity of a protein kinase in a subject can be modulated by administering one or more of these peptides.

## INTERNATIONAL SEARCH REPORT

national Application No PCT/US 00/32852

A. CLASSIF IPC 7	FICATION OF SUBJECT MATTER C12N9/12 C07K14/71 C12Q1/4	8 A61K38/45 C07	7K16/40
According to	International Patent Classification (IPC) or to both national classifi	cation and IPC	
B FIELDS	SEARCHED		
IPC 7	cumentation searched (classification system followed by classification sys		
	ion searched other than minimum documentation to the extent that		
	ala base consulted during the international search (name of data b ternal, CHEM ABS Data, SEQUENCE SEA		sea)
C. DOCUME	ENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the re	elevant passages	Relevant to claim No.
Х	WO 99 01765 A (SLOAN KETTERING I CANCER) 14 January 1999 (1999-01 See especially example 19, SEQ I 18-23, claims 9-12 and fig.18A	.–14)	1-41
X	WO 92 20362 A (SHASHOUA VICTOR E 26 November 1992 (1992-11-26) See SEQ ID No.2, claims 13 and 3		1,3,8,9, 17,20-22
A	WO 98 53050 A (BEN SASSON SHMUEL RES DEV CO (IL); CHILDRENS MEDIC 26 November 1998 (1998-11-26) the whole document	A ;YISSUM AL CEN)	
Α	WO 95 28483 A (COLD SPRING HARBO 26 October 1995 (1995-10-26) page 33, line 11 - line 15	OR LAB)	
Furt	ther documents are listed in the continuation of box C.	X Patent family members are lis	eled in annex.
"A" docume	alegories of clied documents:  ent defining the general state of the art which is not dered to be of particular relevance	"T" later document published after the or priority date and not in conflict to cited to understand the principle of invention	with the application but
"E" earlier	document but published on or after the international	"X" document of particular relevance; to cannot be considered novel or can	nnot be considered to
*L* docume which citatio *O* docum	ent which may throw doubts on priority claim(s) or i is cited to establish the publication date of another on or other special reason (as specified) ment referring to an oral disclosure, use, exhibition or means	involve an inventive step when the  "Y" document of particular relevance; it cannot be considered to involve a document is combined with one o ments, such combination being ot	he claimed invention n inventive step when the r more other such docu-
P. docum	means the prior to the international filing date but that the priority date claimed	in the art.  *&* document member of the same pat	ent family
	actual completion of the international search	Date of mailing of the international	search report
2	25 September 2001	02/10/2001	
Name and	mailing address of the ISA  European Patent Office, P.B. 5818 Patentiaan 2	Authorized officer	
İ	NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo ni, Fax: (+31-70) 340-3016	Groenendijk, M	

### FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-17,20-41(all partially)

Present claims 1-17,20-41 relate to an extremely large number of possible compounds and their use in methods. E.g., said claims even comprise fragments of five amino acids wherein any two amino acids can be replaced. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Moreover, due to the use of expressions like "derivative" and "B4-5 region", which do not exactly define peptides and the inclusion of (substituted) fragments in said claims, the claims contain so many options, variables and possible permutations that a lack of clarity and/or conciseness within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds defined in claim 18, fragments of at least five amino acids thereof, modifications as defined in claim 19, domains of the kinases up to 25 amino acids comprising the peptides of the claims 18 and 19, their use as defined in the claims 35-39,41 and antibodies thereto.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT Information on patent family members

national Application No PCT/US 00/32852

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
WO 9901765	A	14-01-1999	AU WO	8281398 A 9901765 A1	25 <b>-</b> 01-1999 14-01-1999
WO 9220362	Α	26-11-1992	WO	9220362 A1	26-11-1992
WO 9853050	A	26-11-1998	US AU AU CN EP WO	6174993 B1 734642 B2 7583398 A 1257538 T 0983346 A2 9853050 A2	16-01-2001 21-06-2001 11-12-1998 21-06-2000 08-03-2000 26-11-1998
WO 9528483	A	26-10-1995	US US AU AU CA EP JP WO US US US	5889169 A 5962316 A 6211334 B1 703908 B2 2384595 A 3680599 A 2186639 A1 0755445 A1 9512424 T 9528483 A1 6043030 A 5919997 A 5824315 A	30-03-1999 05-10-1999 03-04-2001 01-04-1999 10-11-1995 02-12-1999 15-10-1997 16-12-1997 26-10-1995 28-03-2000 06-07-1999 20-10-1998 19-10-1999